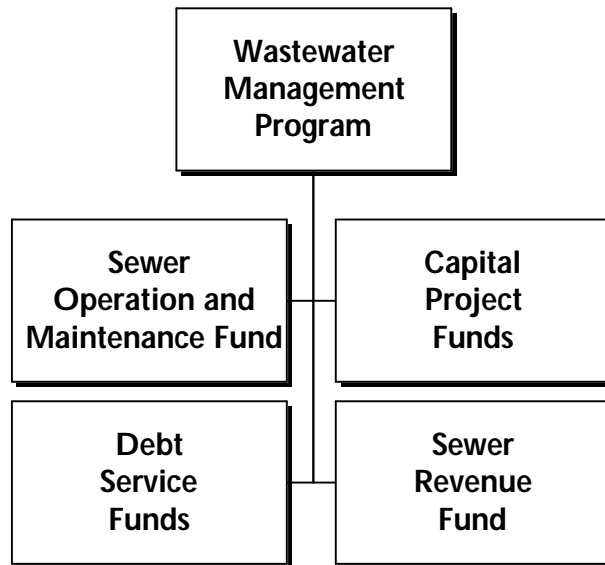


Fund 401

Sewer Operation and Maintenance



Mission

To safely collect and treat wastewater in compliance with all regulatory requirements using state-of-the-art technology in the most cost-effective manner in order to improve the environment and enhance the quality of life in Fairfax County.

Focus

The Wastewater Management Program includes wastewater collection and conveyance, wastewater treatment, planning and monitoring program areas. The primary functions are to strategically plan, efficiently operate, and effectively maintain the wastewater system in the best interest of the County and its customers. Funding for sewer operations and maintenance are financed by a transfer in from Fund 400, Sewer Revenue which is used to credit all operating revenues of the system including availability fees and sewer service charges associated with the program.

This program operates and maintains over 3,200 miles of sewer, 61 pump stations and 53 flow-metering stations. Treatment of wastewater generated is provided primarily through five regional wastewater collection and treatment plants. The regional treatment approach takes advantage of economies of scale in wastewater treatment and ensures the economical and efficient operation and management of the program.

One of the five regional plants is the County's owned and operated Noman M. Cole, Jr. Pollution Control Plant (NCPCP), which is currently permitted to treat 54 million gallons per day (mgd) of flow and is undergoing construction for expansion and process upgrades for an additional 13 mgd of flow capacity. Other regional facilities include the District of Columbia Water and Sewer Authority's Blue Plains Treatment Plant with 31 mgd capacity; Alexandria Sanitation Authority's Treatment Plant with 32.4 mgd capacity; Upper Occoquan Sewage Authority's Treatment Plant with 27.6 mgd capacity; and Arlington County's Treatment Plant with 3.0 mgd capacity. Fairfax County utilizes all of these facilities to accommodate a total capacity of 161 mgd.

The agency has identified a number of trends that influence the operation and maintenance of the sanitary sewer system. The major trends over the next two to five years include the following:

Impact of Total Daily Maximum Load (TDML) (fecal) studies - The United States Geological Survey and Northern Virginia Planning Commission have recently completed TDML studies for Accotink Creek and Four Mile Run. These studies have revealed fecal pollution in these streams, which can be attributed to humans.

Fund 401

Sewer Operation and Maintenance

The County's wastewater collection system is a potential source of such pollution, correction of which could significantly impact Wastewater Management Program's operational and fiscal needs.

Capacity Maintenance Operation and Management (CMOM) - The United States Environmental Protection Agency (USEPA) has been planning for several years to promulgate sanitary sewer overflow (SSO) regulations, which would require municipalities to develop and implement a CMOM program to eliminate any sewer overflows and backups from the wastewater collection systems. The proposed SSO rule and the CMOM program would significantly affect program costs.

Integration of Information Technology - The Geographic Information System (GIS), the Supervisory Control and Data Acquisition (SCADA) system and the infrastructure maintenance require integration for optimal use. Computing and information technology are becoming an integral part of every aspect of the Wastewater Management Program operations. Today's high customer expectations and increasing reliance on consistent 24-hour services, are leading to an increasing dependence on and expectation for stable and reliable integrated information technologies that infuse the business process. Presently, GIS, the SCADA system, the Infrastructure Computerized Management (ICMMS) system and other critical business systems operate independently and do not share information. Future customer service needs will require a full enterprise integration of the critical information technology systems to reduce total cost of ownership, increase availability of critical business data in the right format, and improve the quality and delivery of services to sewer customers.

THINKING STRATEGICALLY

Strategic challenges for the Department include:

- Improving customer service, customer strategy and satisfaction by providing more comprehensive employee training;
- Expanding the Health and Safety Program through the improvement of the Emergency Planning and Response areas to ensure a safe work environment;
- Evaluating the program's financial management strategies to ensure proper cash management and debt capacity;
- Utilizing new automated technologies to enhance the existing computer systems to increase infrastructure rehabilitation projects in the most effective manner; and
- Providing superior wastewater services to achieve a pure and natural state of air and water.

Capital Improvements - Reinvestment in the sewer system infrastructure will ensure optimum operation of all wastewater facilities. This initiative, closely related to CMOM endeavors, emphasizes capital improvements to wastewater collection and treatment facilities to meet requirements of the future sanitary sewer overflow regulations by the USEPA. The program continues to take a proactive stance toward infrastructure rehabilitation; however, CMOM regulations could greatly affect operations.




The Wastewater Management Program is funded by revenues generated by the customers of the sanitary sewer system and recorded in Fund 400, Sewer Revenue. Sewer service charges support system operation and maintenance costs, debt service payments, and capital projects attributable to supporting or improving wastewater treatment services for existing customers. Availability fees support a proportional share of system costs and capital projects attributable to growth of the system required to support new customers. Existing customers are defined as those who have paid an availability fee for access to the system and receive wastewater treatment services. New customers are those who have not paid the availability fee. Upon payment of the availability fee and connection to the system, a new customer becomes an existing customer.

The County allocates expenses, interest income, bond proceeds, debt service payments, capital improvement project costs and funding, and operating transfers between existing and new users of the system. In accordance with the County's "Growth Pays for Growth Policy", both existing and new customers must pay for their share of the system's total annual revenue requirements.

Fund 401

Sewer Operation and Maintenance

New Initiatives and Recent Accomplishments in Support of the Fairfax County Vision

 Practicing Environmental Stewardship	Recent Success	FY 2005 Initiative	Cost Center
Continue to be a leader in protecting the Chesapeake Bay. One of only 33 of the 16,000 wastewater treatment plants in the US to receive the Clean Water Partner Award from USEPA.	✓	✓	Agencywide
Conducted exemplary work in analytical monitoring for the protection of the environment and the Chesapeake Bay, resulting in the receipt of the Laboratory Analyst of the Year Award from Virginia Water Environment Association/ Virginia Wastewater Association (VWEA/VWWA).	✓		Planning & Monitoring
Implement and meet new nitrogen removal standards for the Chesapeake Bay as identified in the state Water Quality Initiatives Fund Agreement.		✓	Treatment
Continue to maintain the sewer collection and conveyance system in accordance with the "best business practices" operating condition by rehabilitating, repairing and replacing failing pumps, sewer lines, and force mains.	✓	✓	Collection
Continue to operate the treatment plant with full compliance to the water quality permit, attaining the Association of Metropolitan Sewerage Agencies (ASMA) Platinum Award for five continuous years.	✓	✓	Treatment
Prevented sewage entering Gunston Cove by fully treating plant flows during the record high flows due to heavy rains and snowmelt in February 2003 and eliminated the risk of water contamination to the creek, bay and cove.	✓		Treatment
 Creating a Culture of Engagement	Recent Success	FY 2005 Initiative	Cost Center
Initiate an "Adopt a School" program to educate and inform the community about the role wastewater treatment plays in protecting the environment.		✓	Planning & Monitoring
 Corporate Stewardship	Recent Success	FY 2005 Initiative	Cost Center
Maintain Standard and Poor's, as well as Fitch's, bond rating of Triple A, the best financial rating a utility can receive.	✓	✓	Planning & Monitoring
Continue to operate NCPCH in a manner that ensures it remains one of the lowest cost wastewater treatment service providers in the region.	✓	✓	Treatment

Fund 401

Sewer Operation and Maintenance

Budget and Staff Resources

Agency Summary				
Category	FY 2003 Actual	FY 2004 Adopted Budget Plan	FY 2004 Revised Budget Plan	FY 2005 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	349/ 348.5	349/ 348.5	345/ 344.5	345/ 344.5
Expenditures:				
Personnel Services	\$18,723,029	\$22,040,399	\$22,040,399	\$23,146,926
Operating Expenses	46,021,818	49,274,548	49,246,548	51,108,514
Capital Equipment	573,111	858,059	1,138,400	1,145,799
Subtotal	\$65,317,958	\$72,173,006	\$72,425,347	\$75,401,239
Less:				
Recovered Costs	(\$544,555)	(\$578,471)	(\$578,471)	(\$589,153)
Total Expenditures	\$64,773,403	\$71,594,535	\$71,846,876	\$74,812,086

FY 2005 Funding Adjustments

The following funding adjustments from the FY 2004 Revised Budget Plan are necessary to support the FY 2005 program:

- ◆ **Employee Compensation** **\$1,106,527**
 An increase of \$1,106,527 in Personnel Services associated with salary adjustments necessary to support the County's compensation program.
- ◆ **Wastewater Treatment** **\$887,367**
 An increase of \$887,367 in Operating Expenses is primarily associated with increases in electricity and heating fuel costs for plant operations and increased chemical usage for wastewater treatment processes to meet the new state water quality permit requirements.
- ◆ **Wastewater Planning and Monitoring** **\$974,599**
 An increase of \$974,599 in Operating Expenses is primarily associated with increased inter-jurisdictional payments to neighboring plants for treatment due to the rising costs of chemicals, electricity, fuel oil and natural gas. In addition, the volume of wastewater flow is increasing due to an increase in multi-family dwellings and commercial development in the County.
- ◆ **Recovered Costs** **(\$10,682)**
 An increase of \$10,682 in Recovered Costs is primarily due to the FY 2005 projected salaries of recoverable positions for sewer line repairs and pump station rehabilitations.
- ◆ **Capital Equipment** **\$1,145,799**
 Funding of \$1,145,799 has been included for new and replacement equipment. New equipment totals \$10,745 for two flow injector modules to run ammonia and bromite samples to meet Virginia Department of Environmental Quality (DEQ) permit requirements for the new TMDL studies. Replacement items total \$1,135,054 for the replacement of vehicles and equipment based on age, mileage and repair cost considerations.

Fund 401

Sewer Operation and Maintenance

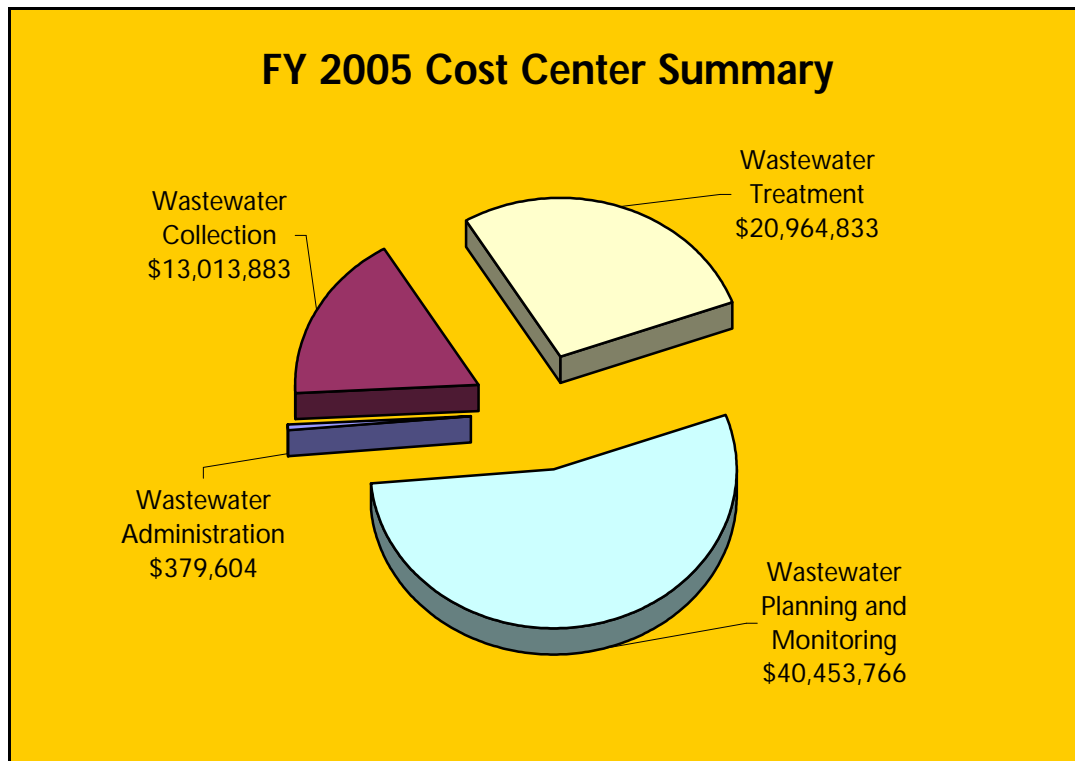
Changes to FY 2004 Adopted Budget Plan

The following funding adjustments reflect all approved changes in the FY 2004 Revised Budget Plan since passage of the FY 2004 Adopted Budget Plan. Included are all adjustments made as part of the FY 2003 Carryover Review and all other approved changes through December 31, 2003:

- ◆ At the FY 2003 Carryover Review, the Board of Supervisors approved an increase of \$252,341 due to the encumbered carryover of capital equipment items that were not received in FY 2003.
- ◆ The County Executive approved the redirection of 4/4.0 SYE positions from Fund 401, Sewer Operation and Maintenance. This adjustment includes the transfer of 2/2.0 SYE positions to Fund 116, Integrated Forest Pest Management, to support the West Nile virus program and the transfer of 2/2.0 SYE positions to Agency 29, Stormwater Management, associated with permit compliance of privately maintained stormwater facilities. No corresponding funding adjustment was required in FY 2004 as these positions will assume responsibilities previously funded under contracted services.

Cost Centers

The four cost centers within Fund 401, Sewer Operation and Maintenance, are Wastewater Administration, Wastewater Collection, Wastewater Treatment and Wastewater Planning and Monitoring. These cost centers work together to fulfill the mission of the sanitary sewer system and carry out the designated initiatives for the fiscal year.



Fund 401

Sewer Operation and Maintenance

Wastewater Administration

Funding Summary				
Category	FY 2003 Actual	FY 2004 Adopted Budget Plan	FY 2004 Revised Budget Plan	FY 2005 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	1/ 1	1/ 1	1/ 1	1/ 1
Total Expenditures	\$349,043	\$370,832	\$370,832	\$379,604

Position Summary
1 Director
TOTAL POSITION
1 Position / 1.0 Staff Year

Goal

To provide for the overall management of the Wastewater Management program and to ensure that the office satisfies the County's needs as they relate to the operation and maintenance of facilities supporting the Wastewater Management Program.

Wastewater Collection

Funding Summary				
Category	FY 2003 Actual	FY 2004 Adopted Budget Plan	FY 2004 Revised Budget Plan	FY 2005 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	150/ 150	150/ 150	149/ 149	149/ 149
Total Expenditures	\$10,491,730	\$12,546,568	\$12,609,167	\$13,013,883

Position Summary		
<u>Collection Program</u>	<u>Gravity Sewers</u>	<u>Pumping Stations</u>
1 Director	1 Engineer IV	1 Engineer IV
1 Supervisor of Facilities Support	1 Engineer II	1 Engineer III
1 Management Analyst III	1 Maintenance Superintendent	1 Industrial Electrician Supervisor
1 Programmer Analyst III	3 Senior Maintenance Supervisors	1 Instrumentation Supervisor
1 Management Analyst II	1 Senior Construction Supervisor	1 Pump Station Supervisor
2 Network/Telecommunications Analysts I	4 Engineering Technicians III	1 Maintenance Superintendent
1 Safety Analyst	6 Engineering Technicians II	1 Engineer II
1 Warehouse Supervisor	1 Map Drafter	1 Industrial Electrician III
1 Warehouse Specialist	13 Engineering Technicians I	3 Instrumentation Technicians III
5 Admin. Assistants III	3 Heavy Equipment Operators	5 Pump Station Operators III
4 Admin. Assistants II	16 Labor Crew Chiefs	2 Industrial Electricians II
1 Laborer II	3 Motor Equipment Operators	3 Plant Mechanics III
1 Storekeeper	4 Truck Drivers	1 Engineering Technician II
	12 Laborers III	3 Instrumentation Technicians II
	19 Utility Workers	1 Welder II
		7 Pump Station Operators II
		4 Plant Mechanics II
		2 Instrumentation Technicians I
		1 Maintenance Trade Helper II
TOTAL POSITIONS		
149 Positions / 149.0 Staff Years		

Fund 401

Sewer Operation and Maintenance

Goal

To operate, maintain, and repair the County's wastewater collection system in a manner that protects Fairfax County citizens and the environment.

Wastewater Treatment



Funding Summary				
Category	FY 2003 Actual	FY 2004 Adopted Budget Plan	FY 2004 Revised Budget Plan	FY 2005 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	151/ 151	151/ 151	149/ 149	149/ 149
Total Expenditures	\$16,757,461	\$19,303,378	\$19,493,120	\$20,964,833

Position Summary					
<u>Noman M. Cole, Jr., Pollution Control Plant</u>		<u>Operations</u>		1	Chief Building Maintenance
		1	Engineer IV	4	Industrial Electricians III
1	Director	1	Engineer III	3	Instrumentation Technicians III
1	Programmer Analyst IV	1	Engineer II	1	Senior Maintenance Supervisor
1	Data Base Administrator	1	Plant Operations Superintendent	4	Industrial Electricians II
1	Engineer IV	7	Plant Operations Supervisors	7	Plant Mechanics III
1	Engineer II	8	Senior Plant Operators	5	Instrumentation Technicians II
1	Safety Analyst	18	Lead Plant Operators	2	Welders II
2	Network/Telecommunications Analysts I	32	Plant Operators	9	Plant Mechanics II
1	Engineering Technician III		<u>Maintenance</u>	3	Painters I
1	Warehouse Supervisor	1	Engineer IV	1	Industrial Electrician I
1	Heavy Equipment Supervisor	1	Engineering Technician II	1	Maintenance Trade Helper II
2	Engineering Technicians II	1	Plant Maintenance Superintendent	1	Senior Utility Worker
1	Engineering Drafter			2	Utility Workers
1	Administrative Assistant IV	1	Industrial Electrician Supervisor	2	Custodians II
1	Warehouse Specialist	1	Instrumentation Supervisor	3	Custodians I
3	Heavy Equipment Operators	1	Plant Maintenance Supervisor		
3	Administrative Assistants III				
1	Warehouse Worker-Driver				
2	Storekeepers				
<u>TOTAL POSITIONS</u>					
149 Positions / 149.0 Staff Years					

Goal

To ensure efficient and effective operation and maintenance of the County's wastewater treatment facilities within the laws and standards established by the Congress of the United States in Public Law 92-500 which designates regulatory powers to the USEPA and the Virginia Department of Environmental Quality.

Fund 401

Sewer Operation and Maintenance

Wastewater Planning and Monitoring

Funding Summary				
Category	FY 2003 Actual	FY 2004 Adopted Budget Plan	FY 2004 Revised Budget Plan	FY 2005 Advertised Budget Plan
Authorized Positions/Staff Years				
Regular	47/ 46.5	47/ 46.5	46/ 45.5	46/ 45.5
Total Expenditures	\$37,175,169	\$39,373,757	\$39,373,757	\$40,453,766

Position Summary		
<u>Financial Management and Planning</u>	<u>Engineering Analysis and Control</u>	<u>Environmental Monitoring</u>
1 Director	1 Engineer IV	1 Environmental Services Director
1 Management Analyst IV	1 Engineer III	2 Asst. Environmental Services Directors
1 Management Analyst III	1 Geog. Info. Spatial Analyst II	1 Environmental Health Supervisor
1 Programmer Analyst III	3 Geog. Info. System Technicians	3 Environmental Health Specialists II
1 Accountant II	4 Engineers II	2 Environmental Technologists III
1 Fiscal Administrator	2 Engineering Technicians III	3 Environmental Technologists II
1 Programmer Analyst I		7 Environmental Technologists I
1 Engineering Technician III		1 Administrative Assistant II
2 Engineering Technicians II		
1 Administrative Assistant IV		
1 Administrative Assistant III 1 PT		
2 Administrative Assistants II		
<u>TOTAL POSITIONS</u>	PT Denotes Part-Time Position	
46 Positions / 45.5 Staff Years		

Goal

To manage sewer revenue collection; to monitor and report County sewage flows treated at non-County facilities; to control, plan, and develop the Wastewater Management Program; and to environmentally monitor County treatment facilities, other publicly and privately-owned treatment facilities in the program, and nearby embayments.

Key Performance Measures

Objectives

- ◆ To achieve a pure and natural state of air and water in Fairfax County by achieving performance results at Wastewater Management Program facilities better than state air and water permits require 100 percent of the time.
- ◆ To maintain the sewer infrastructure effectively by reducing blockages that cause sewer back-ups to less than the 5-year rolling annual average. The 5-year rolling annual average is the average of current year and four previous years of data, currently at 39.
- ◆ To ensure efficient wastewater collection and treatment services by providing service to customers at rates that are the lowest in the area.
- ◆ To provide excellent financial and asset management by ensuring a debt coverage ratio greater than 1.0.

Fund 401

Sewer Operation and Maintenance

Indicator	Prior Year Actuals			Current Estimate	Future Estimate
	FY 2001 Actual	FY 2002 Actual	FY 2003 Estimate/Actual	FY 2004	FY 2005
Output:					
Total average daily wastewater flow treated (million gallons)	102.4	96.1	109.5 / 106.0	110.0	112.0
Emergency repair work order processed	1,537	1,664	2,000 / 2,011	2,400	2,100
Service trouble calls received	1,492	1,348	1,500 / 1,657	1,500	1,500
Operating Reserve maintained (\$ million)	\$15.3	\$17.2	\$17.2 / \$17.2	\$17.8	\$18.7
Efficiency:					
Percent of treatment capacity available for growth	23%	28%	32% / 28%	32%	30%
Emergency repairs, as a percent of total work orders	4.5%	4.2%	4.5% / 4.7%	5.6%	4.8%
Percent of customers responded to within 24 hours	100%	100%	100% / 100%	100%	100%
Sewer Service Billing Rate, \$/1,000 gallons	\$2.81	\$2.88	\$2.95 / \$2.95	\$3.03	\$3.20
Service Quality:					
Sanitary sewer overflows (SSOs) per year (FY 2003, 5-yr. avg. = 30)	28	28	28 / 37	28	28
Percentage of sewage back-ups responded to within 2 hours	100%	100%	100% / 100%	100%	100%
Odor complaints per year (FY 2003, 5-yr. avg. = 58)	42	84	58 / 41	55	55
Percent Capital Improvement Program funded	100%	100%	100% / 100%	100%	100%
Outcome:					
Compliance with Title V air permit and State water quality permit	100%	100%	100% / 100%	100%	100%
Blockages causing sewer back-ups per year (FY 2003, 5-yr. avg. = 39)	39	27	35 / 96	35	35
Average household sewer bill compared to other providers in the area	Lowest	Lowest	Lowest / Lowest	Lowest	Lowest
Debt Coverage Ratio: (Revenue - Operating Cost/Debt)	1.69	1.59	1.24 / 1.24	1.50	1.50

Fund 401

Sewer Operation and Maintenance

Performance Measurement Results

In FY 2003, there were 338,745 connections to the sanitary sewer system, an increase of 4,360 connections over FY 2002. Approximately 87 percent of Fairfax County households are connected to the sewer system. Odor complaints were significantly higher in FY 2002 due to increased home development and construction work near NCPCP, dry weather, and predominant wind direction which produced a higher than normal level of odorous gases. For FY 2001 and beyond, the figures include reported complaints from both the treatment plant and the collection system.

Wastewater flows were up significantly due to wet weather conditions and the increase in new customers in FY 2003. In February 2003, 63 of the 96 backups occurred on February 22, 2003, when heavy snowfall was soon followed by heavy rainfall. The increase in Sanitary Sewer Overflows was due to seven grinder pump failures and five acts of vandalism against the sewer system.

When comparing average annual sewer service billings for the regional jurisdictions, Fairfax County has the lowest average annual sewer service billings at \$224. Other regional jurisdictions range from \$248 to \$371. Rates are effective as of January 1, 2003 (FY 2003). The average sewer service billings for the other regional jurisdictions have been developed by applying each jurisdiction's sewer service rate to appropriate Single Family Residence Equivalents (SFRE) water usage determined from an analysis of Fairfax County Water Authority's (FCWA) historical average water usage records for SFREs. Based on the latest rate comparison, Fairfax County had the lowest annual sewer service charge and the third lowest availability fee in the Washington Metropolitan region. The program is able to maintain its competitive rates while providing quality service to its customers, protecting the environment, and maintaining sufficient financial resources to fully fund the program's initiatives.

Fund 401

Sewer Operation and Maintenance

FUND STATEMENT

Fund Type G40, Enterprise Funds

Fund 401, Sewer Operation and Maintenance

	FY 2003 Actual	FY 2004 Adopted Budget Plan	FY 2004 Revised Budget Plan	FY 2005 Advertised Budget Plan
Beginning Balance	\$5,553,095	\$199,103	\$2,674,650	\$2,468,036
Transfer In:				
Sewer Revenue (400)	\$61,894,958	\$71,640,262	\$71,640,262	\$72,596,080
Total Transfer In	\$61,894,958	\$71,640,262	\$71,640,262	\$72,596,080
Total Available	\$67,448,053	\$71,839,365	\$74,314,912	\$75,064,116
Expenditures:				
Personnel Services	\$18,723,029	\$22,040,399	\$22,040,399	\$23,146,926
Operating Expenses	46,021,818	49,274,548	49,246,548	51,108,514
Recovered Costs	(544,555)	(578,471)	(578,471)	(589,153)
Capital Equipment	573,111	858,059	1,138,400	1,145,799
Total Expenditures¹	\$64,773,403	\$71,594,535	\$71,846,876	\$74,812,086
Total Disbursements	\$64,773,403	\$71,594,535	\$71,846,876	\$74,812,086
Ending Balance²	\$2,674,650	\$244,830	\$2,468,036	\$252,030
PC Replacement Reserve ³	\$110,430	\$244,830	\$244,830	\$252,030
Unreserved Balance	\$2,564,220	\$0	\$2,223,206	\$0

¹ In order to account for revenues and expenditures in the proper fiscal year, an audit adjustment in the amount of \$478,817 has been reflected as an increase to FY 2003 expenditures. The audit adjustment has been included in the FY 2003 Comprehensive Annual Financial Report (CAFR). Details of the FY 2003 audit adjustments will be included in the FY 2004 Third Quarter Package.

² The Wastewater Management Program maintains fund balances at adequate levels relative to projected operation and maintenance expenses. These costs change annually; therefore, funding for sewer operations and maintenance is carried forward each fiscal year, and ending balances fluctuate, reflecting the carryover of these funds.

³ The PC Replacement Reserve was established for the timely replacement of computer equipment.